

NEOTROPICAL NEOEMPHERIA (DIPTERA,
MYCETOPHILIDAE)

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(With two plates and twelve text-figures.)

UNTIL recently comparatively little knowledge has been obtained regarding the species of fungus-gnats (Mycetophilidae) occurring in South America. The British Museum Expedition to the Patagonian Andes in 1926-7 resulted in the acquisition of material of some 250 species of this family (including Sciarinae), mostly undescribed. Since then efforts have been made to obtain further fungus-gnat material for the Museum from the American Continent, because it was felt that the value and interest of any report upon the Patagonian collection would be greatly enhanced if comparison could be made with the fungus-gnat fauna of other parts of America. The Museum has been especially fortunate in obtaining within the last few years extensive collections made by Dr. A. Dampf in Mexico and Mr. F. Plaumann in Southern Brazil, including material of perhaps 500 species of fungus-gnats, few if any of which are the same as those represented in the Andean collection. It therefore seems probable that the number of South American species of this family will eventually be counted by thousands.

The genus *Neoempheria*, which forms the subject of this paper, does not occur, so far as is known at present, in the Andean region, but is widely distributed throughout the tropics. Numerous species occur in the Ethiopian and Oriental regions, and a few in Europe and North America. Nearly all the species have conspicuously patterned wings, these patterns exhibiting great diversity but remaining constant in any one species. The synonymy of the genus is as follows :

NEOEMPHERIA Osten-Sacken.

1863. *Empheria* Winnertz, *Verh. zool.-bot. Ges. Wien*, **13** : 783 (preoccupied by *Empheria* Hagen, 1856).
 1878. *Neoempheria* Osten-Sacken, *Smithson. misc. Coll.*, **16**, art. 2.
 1909. *Mycomya* subgenus *Neoempheria* Johannsen, in Wytzman's *Genera Insectorum*, **93** (Diptera, Mycetophilidae) : 45.
 1911. *Pleonazoneura* Enderlein, *Stettin. ent. Ztg.*, **72** : 156.
 1911. *Neurocompsa* Enderlein, *Stettin. ent. Ztg.*, **72** : 158.
 1912. *Neoempheria* Johannsen, *Bull. Maine Agric. Exp. Sta.*, **180** : 157.

Genotypes : *Empheria* and *Neoempheria*, *Sciophila striata* Meigen (Europe) ; *Pleonazoneura*, *P. johannseni* Enderlein (S. Brazil) ; *Neurocompsa*, *N. ornatipennis* Enderlein (S. Brazil).

Only three neotropical species have hitherto been referred to this genus : *varipennis* F. Lynch Arribalzaga (Misiones Terr.), *maculipennis* Williston (St. Vincent, W.I.), and *apicalis* Kertész (Peru). To these however must be added *Sciophila formosensis* F. Lynch Arribalzaga (Chaco), *Pleonazoneura johannseni* End. and its "variety" *evanescens* Enderlein, and *Neurocompsa ornatipennis* Enderlein (Santa Catharina). Enderlein distinguished his genera *Pleonazoneura* and *Neurocompsa* from *Neoempheria* chiefly on account of the strong vein-like fold between R and M, and *Neurocompsa* further by

the possession of an extra cross-vein-like thickening between this fold and the radius. Actually however, the vein-like fold is traceable with greater or less distinctness in most if not all species of *Neoempheria*, and the additional "cross-vein" is not even a constant specific character in *N. ornatipennis*. The distinctions mentioned by Enderlein are therefore valueless. There are indeed some other characters by which the group to which Enderlein's species belong may be distinguished, but in my opinion these are hardly even of subgeneric value.

I have now examined over thirty neotropical species of this genus, mostly collected by Herr F. Plaumann at Nova Teutonia, Santa Catharina, Brazil. Through the kindness of Dr. Kästner of the Stettin Museum I have been able to re-examine Enderlein's type material collected by Lüderwaldt, and have ascertained that not two but six species were represented among the nine specimens. Figures and re-descriptions of all these are included in this paper.

Species of this genus, like those of the allied *Mycomyia*, are notable for the complexity of the male genitalia and for the very great differences often found in these organs in species which are obviously very closely allied, though it may also occur that species which on external features seem obviously distinct show only small differences in the genitalia. In examining genitalia of *Neoempheria* in the dry state it should be borne in mind that the whole hypopygium is usually twisted or inverted, so that dorsal structures may appear lateral or ventral and vice versa; it is however easy to decide which is the true dorsal surface by the presence on it of the anal segment. In the accompanying figures the dorsal aspect of half of the hypopygium is shown on the left, the ventral aspect on the right. The following parts may be recognized in most or all species: (1) the large ninth tergite (*t*), divided nearly to the base into two halves and often with the tip of each half produced into a long process (*pt*) of varied form; (2) the anal segment (*as*), composed of paired cerci and an unpaired but sometimes divided sternite, always pubescent; (3) the ninth sternite (*s*), divided to the base into two lobes which are almost always completely bare and membranous and may be difficult to see in the mount unless the specimen has been stained; (4) a pair of inner styles (*is*) lying beneath the tergite but articulated with the sternite, never very hairy but often bearing a few or rather numerous black spines or variously toothed; (5) a pair of outer styles (*os*) articulated with the sternite ventro-laterally, usually clothed rather densely with longish hair; (6) one or two pairs of processes of the sternite (*ps*), usually bare or only finely pubescent; (7) a pair of large fleshy parameres (*pm*) lying within or between the lobes of the sternite, always completely bare, usually pale in colour and appearing as broad flat plates in side view in the dry specimen; (8) some small structures connected with the aedeagus, visible only in the mounted specimen. In addition to the structures of the hypopygium proper, the eighth tergite (*8t*) and eighth sternite (*8s*) show noteworthy specific differences in shape and in the number of hairs (if any) on their posterior margins. The females as well as the males show very considerable differences in the genitalia, but I have not investigated these.

Differential characters applicable to both sexes are to be found not only in the markings of the thorax and wings, but also in venation, trichiation of the wing-veins, and chaetotaxy of the head. All the neotropical species known to me possess only two strong bristles on the scutellum, in this respect differing from the European species (including the genotype), which have four or more such bristles. The neotropical species may be classified in about eight groups,

based on the length of vein Sc₁, position of fCu (base of cubital fork), length of ocellar bristles (the pair immediately behind the black ocellar spot), presence or absence of minute setulae (macrotrichia) on Sc and on branches of media and cubitus, especially M₂, and nature of markings (if any) of thoracic pleurae. (The characters of the groups as defined below are not repeated in the specific descriptions which follow.)

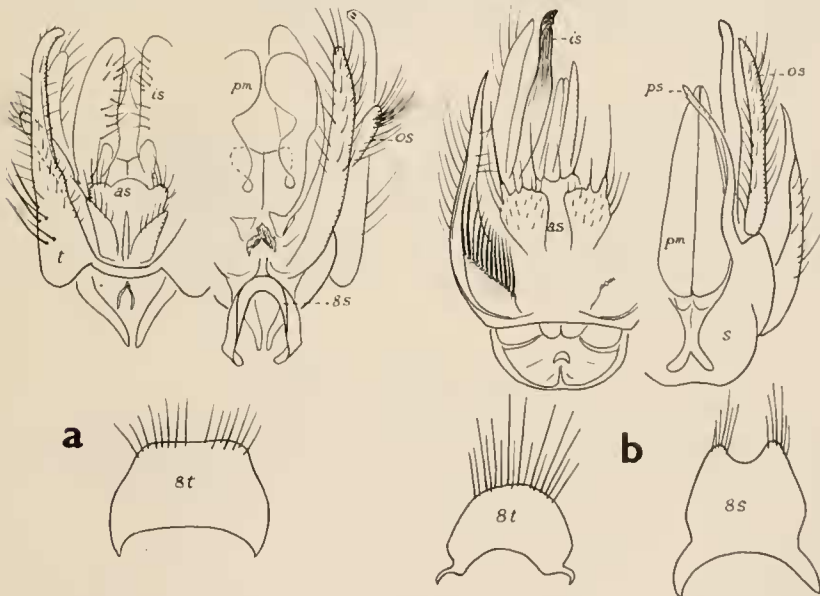
GROUP A.

Sc reaching almost to the end of the small cell, which is only about half as long as stem of median fork; Sc₂ transverse and well beyond base of Rs. Costa produced only a little beyond tip of R₅. fCu before base of Rs. Sc setose on more than its distal half; M₁, M₂, Cu, Cu₁ and Cu₂ all setose for the whole of their length. Costal and basal cells all dark. Ocellar bristles quite short. Thorax unicolorous. Halteres yellow.

The species of this group approach nearer to the genotype (*N. striata* Mg.) than do those of any of the other South American groups of the genus.

Neoempheria neivai sp. n.

♂. Head yellowish except for the black ocellar spot; antennal flagellum blackish; palpi largely dark. Thorax light yellowish on sides, rather more reddish-yellow above, with black hairs and bristles, but quite unmarked; a



TEXT-FIG. 1.—Hypopygia of *Neoempheria*: A, *neivai*; B, *bipectinata*.

pair of bare stripes between aerostichal and dorso-central hairs. Abdomen with tergites 1, 2, 4 and 7 yellow, 3, 5 and 6 black; venter yellowish. Legs yellow, including whole of hind femora; tibiae and tarsi darkened. Wings (Pl. I, fig. 1) with tip and whole anterior margin, including basal cell, dark; also with a large dark patch below tip of Cu₂. Hypopygium (text-fig. 1, A)

very different in structure from that of all the other South American species examined; a notable feature is the apparent absence of the eighth sternite, unless it is represented by a narrow bare strip of chitin fused on to the hypopygium.

♀. Differs from ♂ in colouring of abdomen and legs: tergites 2-6 are entirely black, only 1 and 7 being yellow; hind femora almost entirely blackish, contrasting with the others. Thorax and wings as in ♂.

Wing-length 6-7 mm.

BRAZIL: Nova Teutonia (*Plaumann*), 1 ♂ (type), 2 ♀. BRITISH GUIANA: Kutari Sources (*G. A. Hudson*), 1 ♂.

At the suggestion of Father Borgmeier this fine species is named in honour of Dr. Arthur Neiva.

N. neivai corresponds in many respects with the description of *Sciophila formosensis* F. Lynch Arribalzaga,¹ and there seems to be little doubt from the description that Lynch's species is actually a *Neoempheria* of this same group. Lynch's definite statements as to the abdominal colouring of his type (a male from Formosa, Argentine Chaco) seem however to show that it is a different species; it is said to have the abdomen fuscous with the last two and part of the fifth tergites yellowish. Lynch also does not mention any dark area below the tip of Cu₂.

N. apicalis Kertész,² described from one female from Callanga, Peru, must also belong to this group of the genus, but according to the description differs from both *N. neivai* and *N. formosensis* in having three darker stripes on the mesonotum and in details of abdominal markings. Kertész, like Lynch, does not mention the presence of a dark area below Cu₂.

GROUP B.

Sc reaching to or beyond middle of the small cell, which is somewhat shorter than stem of median fork; Sc₂ transverse and placed at base of Rs. Costa distinctly produced. fCu before base of Rs. Sc setose on distal half; M₁, M₂ and Cu₁ setose except narrowly at base, Cu and Cu₂ setose throughout. Wing-markings conspicuous, but costal and basal cells clear. Ocellar bristles short. Pleurae with longitudinal dark stripe. Halteres with dark knob.

Neoempheria bipectinata sp. n.

♂. Head mainly yellowish, darker behind, especially towards sides; ocellar spot black. Antennae brownish, scape lighter; seta on second segment rather long. Palpi entirely black. Thorax mainly brown above, without darker or lighter stripes, sides of mesonotum and most of pleurae yellowish; a dark brown band across base of postnotum, continued along each side across base of pleurotergite and upper margin of sternopleura to base of front coxa, leaving anepisternite entirely pale. Abdomen with tergites 1 and 7 yellowish, 2-4 each yellowish with a median dark stripe connected with a rather narrow dark posterior band, 5 and 6 mainly dark. Legs mainly yellowish but hind femora darker. Wings as figured (Pl. I, fig. 2); basal cell and base of cubital fork clear. CuP and An both strong. Hypopygium (text-fig. 1, B) remarkable for the pair of comb-like structures at base of tergite and the form of the anal segment.

¹ 1892, *Bol. Acad. Cient. Córdoba*, 12: 416.

² 1909, *Ann. hist. nat. Mus. Hung.*, 7: 140.

♀. Resembles ♂.

Wing-length 4.5-5.5 mm.

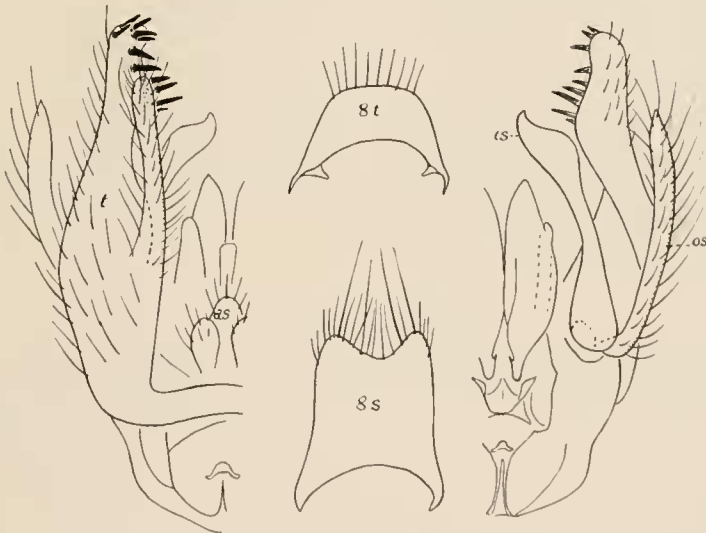
BRAZIL: Nova Teutonia (*Plaumann*), 1 ♂ (type), 1 ♀.

GROUP C.

Sc ending above base of Rs; Sc2 oblique and practically at tip of Sc. R4 above or just beyond base of median fork, the small cell long. Costa distinctly produced. fCu before base of Rs. M2 turned slightly downwards at extreme tip. Arrangement of setae on veins differing in the two sexes; in ♂ M1, M2 and Cu1 are setose except at base and Cu2 is entirely setose; in ♀ M1 is setose only at tip, M2 bare or with a few setae at tip, Cu1 bare, Cu2 setose only at base. In both sexes Sc is setose on most or all of the distal half, Cu sparsely setose. Wings highly adorned; basal cell with a dark spot at or near base. Ocellar bristles short. Pleurae with oblique dark stripe, extending from base wing across anepisternite to base of front coxa. A pair of bare stripes between acrostichal and dorso-central hairs. Halteres with dark knob.

Neoempheria spinosa sp. n.

♂. Head largely yellowish above, but dark brown behind and towards sides; also darkened between the black ocellar spot and base of antennae. Antennae with scape yellowish, flagellum black. Palpi wholly black. Thorax largely brown above, but with the bare stripes pale; sides of mesonotum broadly yellow,



TEXT-FIG. 2.—Hypopygium of *Neoempheria spinosa*.

also most of pleurae; scutellum dark above; postnotum broadly dark at base, somewhat lighter posteriorly; pleurotergites dark brown on posterior half. The oblique dark pleural stripe occupies anterior parts of anepisternite and sternopleurite and extends rather faintly over front coxa. Middle and hind coxae entirely yellowish; hind femora somewhat darker than the others, but not conspicuously so. Abdomen with tergites 1 and 2 largely pale, but both with a

median dark longitudinal stripe, sometimes reduced to spots; 3 mainly dark, with a moderately large pale spot towards each side at base, these spots leaving posterior and most of lateral margins broadly dark but just reaching sides at base; 4 mainly pale, but dark in middle above, the dark area broad basally but not or scarcely reaching posterior margin, lateral margin also dark; 5 and 6 mainly dark; 7 pale (but retracted). Wings as figured (Pl. I, fig. 7); notable features in the markings are the clear costal cell with a small dark area at its base, dark spot near but not quite at base of basal cell, and more intense darkening on inner edge of dark area at tip; dark area in cell Cu1 uniform in tint; pale area below Cu2 crossing CuP. Hypopygium (text-fig. 2) very large, with each half of tergite split into two parts, an upper finger-like part and a larger lower part with many strong black spines at tip.

♀. Resembles ♂ except in trichiation of veins, as noted in group diagnosis. Seventh tergite large and mainly pale, but with its posterior margin dark; setae on its posterior corners not specially numerous or strong. Hind margin of seventh sternite with some longish black hairs. Eighth sternite large, with uniform sparse pubescence.

Wing-length 4.5-5.5 mm.

BRAZIL: Nova Teutonia (Plaumann), 8 ♂ (including type), 2 ♀.

***Neoempheria brevicauda* sp. n.**

♀. Very similar to *N. spinosa*, with which it agrees in having the postnotum darker at the base and lighter distally, posterior coxae entirely yellow, dark area in cell Cu1 uniform in tint, and pale area below Cu2 crossing CuP. Trichiation of wings as in *N. spinosa* ♀. Differs from *N. spinosa* chiefly as follows: Wings (Pl. I, fig. 8) with the pale area at base of median fork smaller and dark area below Cu2 differently shaped. Abdomen with the yellow spots on tergite 3 larger. Tergite 7 shorter and more extensively dark. Sternite 7 with few or no long hairs on posterior margin. Sternite 8 shorter, with a loose tuft of dark pubescence near base on each side. The lateral flaps below tergite 7 (of uncertain homology) are smaller and much less pubescent than in *N. spinosa*.

BRAZIL: Nova Teutonia (Plaumann), 1 ♀.

***Neoempheria simplex* sp. n.**

♂. Closely resembles *N. spinosa* except in the following details: dark markings of mesonotum more intense, therefore contrasting more with the pale parts. Postnotum uniformly blackish. Wings (Pl. I, fig. 10) with the subapical pale area smaller; dark area in cell Cu1 rather more intense proximally; pale area below Cu2 inconspicuous and not crossing CuP. (Abdomen lost after mounting hypopygium; markings probably agreeing with ♀ as described below.) Hypopygium (text-fig. 3, A) very different in structure, the tergite narrower, undivided, with a small tuft of hairs but no spines at tip.

♀. Resembles ♂ in markings of thorax and wings. Abdomen with tergites 1 and 2 more extensively dark above than in *spinosa*, 3 and 7 nearly all dark. Structure of ovipositor quite different from that of *N. spinosa* and *brevicauda*; tergite 7 with many long dark hairs on its posterior margin and with about 6 long stout bristles on the part that is folded under on each side. Trichiation of wings as in *N. spinosa* ♀.

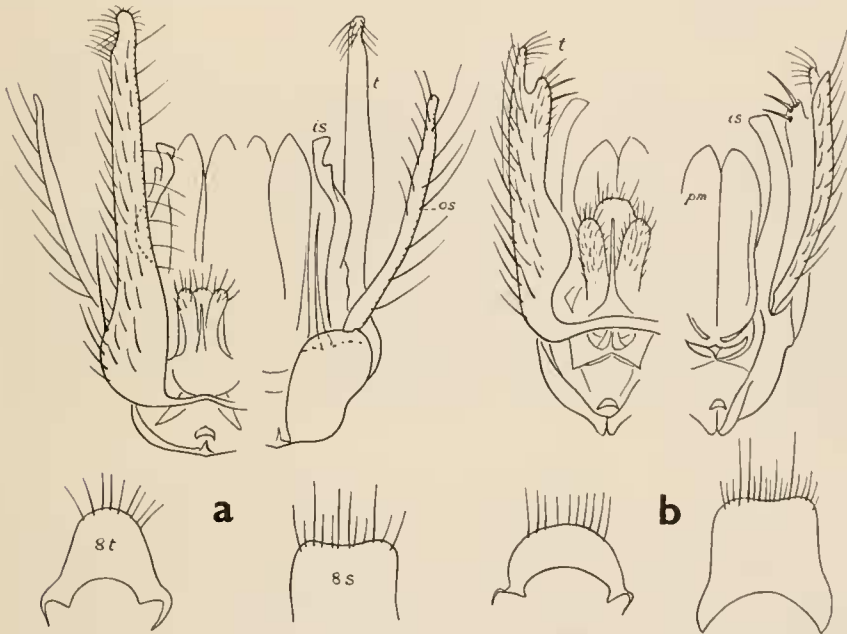
Wing-length about 5 mm.

BRAZIL: Nova Teutonia (*Plaumann*), 1 ♂ (type), 1 ♀.

A second ♀ (of which the wing is figured, Pl. I, fig. 9) differs from the first in having the subapical pale area of the wings larger, thus more resembling *N. spinosa*; the structure of its ovipositor however is the same as that described above.

Neoempheria bilobata sp. n.

♂. Very much resembles the last three species, but differs from all of them in having a dark streak running almost whole length of hind coxa. Postnotum all dark. Tergites 1 and 2 each with only a small dark area above, 3 extensively pale at sides. Wings (Pl. I, fig. 11) marked similarly to those of *N. simplex*,



TEXT-FIG. 3.—Hypopygia of *Neoempheria*: A, *simplex*; B, *bilobata*.

except that the subapical pale area is differently shaped. Hypopygium (text-fig. 3, B) quite different from that of *N. spinosa* or *simplex*: tergite bilobed at tip, with about three stout bristles on inner lobe.

Wing-length about 4.5 mm.

BRAZIL: Nova Teutonia (*Plaumann*), 1 ♂.

Neoempheria borgmeieri sp. n.

♀ (?). Head yellow; ocellar spot, palpi and flagellum black. Ocellar bristles reaching about half-way from their insertion to base of antennae. Thorax mainly yellow; mesonotum with three narrow parallel dark brown stripes running the whole length and connected on front margin, one along the inter-acrostichal space, the other two sublateral, no trace of additional stripes along the lines of dorso-central hairs; lateral stripes a little wider than the medial one. Pleural markings as in other species of Group C; the oblique stripe well marked,

pleurotergites indefinitely darkened posteriorly. Posterior coxae all yellow. Wings with the markings more suffused than in other species of this group; basal cell more than half dark; dark area in middle extending distinctly into base of median fork, which it does not in the other species. M1 setose on distal third, Cu1 on distal half; M2 bare; Cu2 setose throughout. R4 inwardly oblique instead of transverse as is normally the case in this genus.

Wing-length barely 4 mm.

BRAZIL: Bom Retiro, S. Cath., Prade, 20.i.29 (*Borgmeier*), 1 ♀ (?).

I have described this specimen in spite of its damaged condition because its colouring is quite distinct from that of all other Neotropical species of the genus known to me. The markings and trichiation of the wings will distinguish it from any species of Groups D or E.

GROUP D.

Venation as in Group C. Trichiation of veins alike in the two sexes; Sc bare or almost so; Cu setose except at base; M1, Cu1 and Cu2 setose throughout, but M2 completely bare. Branches of median fork rather widely divergent. M2 tending to be turned upwards at tip. Wing-markings conspicuous; basal cell dark at base. Two of the bristles immediately behind ocelli are long, extending forwards almost or quite as far as base of antennae; a second pair of ocellar bristles also somewhat longer than usual, but not nearly so long as the median pair. Bare stripes on mesonotum as in Group C. Pleurae with an oblique dark stripe from wing-base to base of front coxa; other dark pleural markings sometimes present but separate from this stripe; pleurotergite either entirely pale or with the anterior margin darkened instead of the posterior as in Group C. Knob of halteres dark (except in *N. puncticoxa*).

Neoempheria plaumanni sp. n.

♂. Head light brownish, ocellar spot black as usual. Antennae with scape yellowish, flagellum brown above, yellowish beneath on basal half or more. Palpi entirely black. Thorax brown above, darker (but not conspicuously so) along the stripes of acrostichal and dorso-central bristles and at the sides of the dark area; sides of mesonotum rather broadly pale; pleurae with yellowish ground, the oblique stripe broad and distinct; a dark brown band at base of postnotum extends on each side across the suture between pleurotergite and anepisternite. Abdominal tergites largely dark above, yellowish at sides, fourth more extensively so but with a considerable dark area. Pleural stripe extending on to front coxa; hind coxa also with a dark streak outwardly. Wings as figured (Pl. II, fig. 13); costal margin mainly yellow; tip of marginal cell broadly dark; brown spot over tip of Sc small; a brown spot fills basal third of upper basal cell, and a larger dark brown area fills base of cell R5; a brown patch connects R5 with M1 at about middle of fork. Halteres with dark knob. Hypopygium (text-fig. 4, A) elongate but not very stout; tergite ending in a long black finger; outer style dark, widened beyond middle; inner style entirely pale, bent but simple.

♀. Resembles ♂, but thorax usually darker above.

Wing-length, 5-6 mm.; body-length 6-7 mm.

BRAZIL: Nova Teutonia (*Plaumann*), numerous specimens of both sexes, including type ♂.

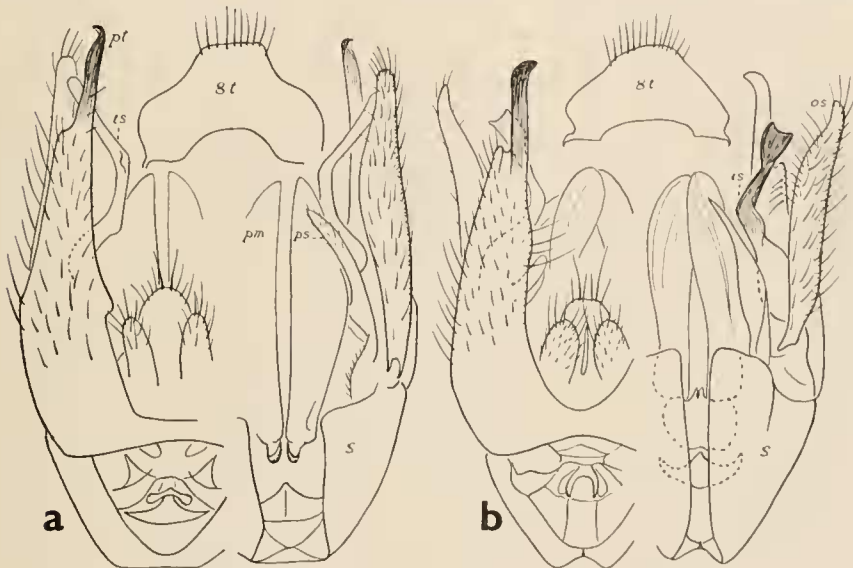
Neoempheria plaumanni var ?.

♀. Resembles *N. plaumanni* in most respects, including the presence of a dark streak on outer side of hind coxa, but differs from that species and the other two described below in that the wings (Pl. II, fig. 14) have no dark areas in base of cell R₅ and immediately below fCu.

BRAZIL: Nova Teutonia (*Plaumann*), 1 ♀.

Neoempheria flavicoxa sp. n.

♂. Very similar to *N. plaumanni*, except that the hind coxa is entirely yellow; the mesonotal markings might be described as five dark stripes separated



TEXT-FIG. 4.—Hypopygia of *Neoempheria*: A, *plaumanni*; B, *flavicoxa*

by four yellow ones, all the dark stripes connected in front and the middle three convergent behind; the stripes are rather more definite than in *N. plaumanni*. Wings (Pl. II, fig. 15) almost as in *plaumanni*, but dark area below Cu rather differently shaped. Hypopygium (text-fig. 4, B) resembling that of *N. plaumanni*, but differing in various small details, notably in having the inner style blackened and truncate at the tip.

♀. Resembles ♂.

BRAZIL: Nova Teutonia (*Plaumann*), 1 ♂ (type), 2 ♀.

Neoempheria puncticoxa sp. n.

♂. Very similar to *N. plaumanni* and *N. flavicoxa*, but differs from both in having the last palpal segment mainly yellow, the postnotum with a dark spot in middle at base instead of a dark basal band, front coxa with a small separate dark spot in middle in front, and knob of halteres almost entirely yellow. Hind coxa all yellow as in *N. flavicoxa*. Mesonotum with five dark stripes as in the two

allied species, but the outer pair of stripes less sharply defined outwardly. Hypopygium (text-fig. 5) resembling that of *N. plaumanni*, but differing in having the inner style forked and in some other details.

♀?. Front coxa as in ♂, but postnotal dark band almost complete (palpi and halteres broken).

BRAZIL : Nova Teutonia (*Plaumann*), 1 ♂ (type), 1 ♀.

Neoempheria mülleri sp. n.

♂. Head yellow above, dark behind; palpi black as usual; scape yellow, flagellum blackish. Ocellar bristles practically reaching base of antennae; a longish bristle on second antennal segment. Thorax in darker specimens largely blackish-brown above, with a wedge-shaped median yellow stripe which is divided by an indistinctly darker line along the acrostichal hairs, and towards each side with a small oval yellow spot; in lighter specimens the sublateral pale spot may be longer. Scutellum pale yellowish. Sides of mesonotum yellowish but less broadly so than in some species; ground-colour of pleurae yellow, but dark markings more extensive than in most species, the usual oblique stripe being less definite on this account; whole anepisternite dark, also a large part of sternopleura, but upper part of latter pale. Abdomen with large yellow areas on sides of tergites; tergite 2 with its posterior margin rather broadly yellow; tergite 4 narrowly yellow at base and broadly so posteriorly, leaving a rather narrow dark band, which is widest in middle; 5 and 6 with large yellow lateral triangles which do not quite meet in middle of posterior margin. Front coxae mainly pale except at base; middle and hind coxae with or without small dark marks outwardly. Hind femur darkened on distal half or more, but pale at base. Wings (Pl. II, fig. 16) with costal and marginal cells alternately yellow and brown, a wide brown area before tip of Sc; basal half or more of basal cell dark; a dark cloud adjoins M₁ in middle of cell R₅, but does not nearly reach up to R₅ as it does in *N. plaumanni* and related species. Sc bare. Hypopygium (text-fig. 6, c) resembling that of *N. plaumanni* in that the tergite has a blackened finger-like process at the tip, and the outer style is broad and dark, but the sternite is more developed, forming a pair of large pale bare lobes. Inner style slender, darkened at tip, with a single small tooth near middle; inner processes of sternite with bifid tips.

♀. Resembles ♂. Sc usually with some setae at tip.

Wing-length 4-5 mm.

BRAZIL : Nova Teutonia (*Plaumann*), 4 ♂ (including type), 3 ♀.

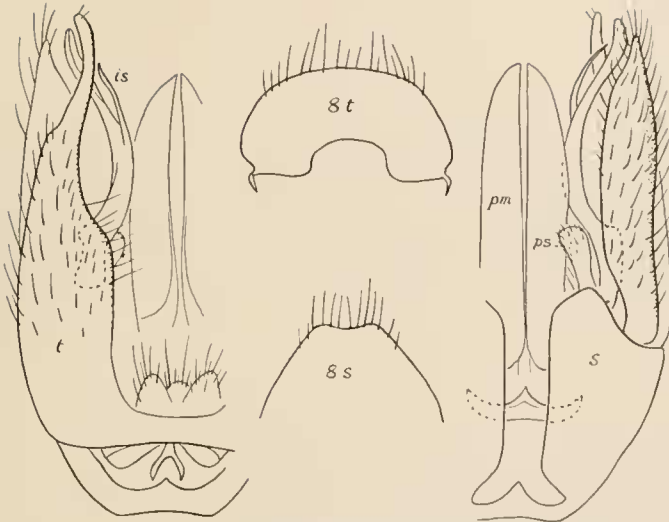
Dedicated to the pioneer Brazilian Dipterist Fritz Müller.

This species is closely related to *N. varipennis* F. Lynch A. (Misiones Terr.) and to *N. maculipennis* Will. (St. Vincent, W.I.), all three having very similar wing-markings, but differing in other details.

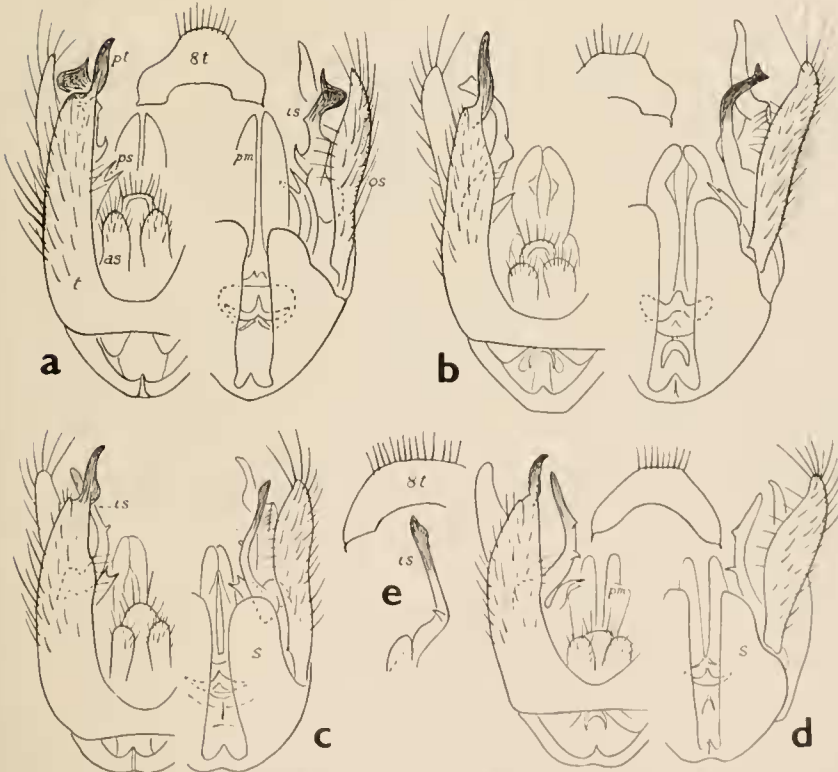
Neoempheria varipennis (F. Lynch Arribalzaga).

1892. *Empheria varipennis* F. Lynch Arribalzaga, *Bol. Acad. Cienc. Córdoba*, 12 : 423.

A series of specimens in the Plaumann collection in the British Museum agree with the description of *N. varipennis*, and show the following differences from the new species described above: Mesonotum not so dark, and with the sublateral pale areas forming short stripes rather than spots. Fourth abdominal tergite more extensively dark, the dark area nearly reaching posterior margin



TEXT-FIG. 5.—Hypopygium of *Neoempheria puncticoxa*.



TEXT-FIG. 6.—Hypopygia of *Neoempheria*: A, *varipennis*; B, *lanei*; C, *mülleri*; D, *maculipennis*; E, *maculipennis* ssp. *bradleyi*.

in middle. Front coxa largely dark. Hypopygium (text-fig. 6, A) with tip of inner style expanded and blackened, and with some other small differences.

***Neoempheria maculipennis* Williston.**

1896. *Neoempheria maculipennis* Williston, *Trans. Ent. Soc. London*, 1896 : 262.

Three males (type and paratypes) of *N. maculipennis* in the British Museum show the following differences from *N. mülleri* sp. n. Thorax paler, striped as in *N. varipennis*; sternopleura not at all darkened. Hind femora entirely yellow. Fifth and sixth abdominal tergites, as well as the fourth, with complete pale apical bands. Wings (Pl. II, fig. 18) with a small pale area in base of median fork, otherwise as in *mülleri* and *varipennis*. Hypopygium (text-fig. 6, D) with finger-like process of tergite differently shaped; inner process of sternite simple, not bifid; inner style with two small teeth at some distance apart near middle.

***Neoempheria maculipennis* subsp. *bradleyi* subsp. n.**

♂. Mesonotum more shining than in the types of *maculipennis* and rather differently marked; a small dark area above each shoulder connected with the usual sublateral dark stripes and with very narrow dorso-central dark stripes, but no trace of acrostichal dark stripe, so that the resulting mesonotal pattern might be described as three rather broad yellow stripes narrowly outlined with dark. Tergite 5 narrowly pale-bordered, 6 dark. Hind femora rather broadly dark-tipped, but hind coxa entirely yellow, as in *maculipennis*. Sternopleura dark in middle. Wings as in *maculipennis*, with a small pale area in base of median fork. Hypopygium (text-fig. 6, E) very much as in typical *maculipennis*, the parameres having the same rather unusual form, but inner style rather differently shaped and with only one tooth; eighth tergite with a longer row of setae.

PERU: La Sombra, Putumayo District (*J. Chester Bradley*), 1 ♂, 22. viii. 1920. Type in Cornell University Collection.

***Neoempheria* sp. n. ?**

♀. Resembles *N. mülleri* and *varipennis* in most respects, but differs from them and resembles the types of *maculipennis* in having hind femora entirely yellow; differs from all three in that the yellow mesonotal stripes are more distinct, all reaching back to the scutellum, and the dark area above M1 extends narrowly to R5, somewhat as in *N. plaumanni* and related species, though this dark area (and more obviously the pale area which precedes it in cell R5) is much more oblique than in those species. Fourth tergite with large apical lateral yellow spots, but dark area reaching posterior margin in middle; 5 and 6 with small apical lateral yellow spots.

Wing-length 5 mm.

BRAZIL: Nova Teutonia (*Plaumann*), 1 ♀.

This specimen may be a variation of *N. varipennis* or *mülleri*, but is more probably a distinct species.

***Neoempheria lanei* sp. n.**

♂. Head as in the allied species, but thorax much darker. Mesonotum mainly blackish brown, the usual three or four paler stripes barely distinguishable and the dark colour extending to the sides, leaving only a small yellow mark on

the margin some distance in front of the wing-base. Anterior pronotal lobes dark brown instead of yellow as in all the other species of this group. Sterno-pleura almost entirely dark, and pleuro-tergite more extensively dark than usual. Abdomen with complete though rather narrow pale apical bands on tergites 2, 4 and 5. Front coxae almost all blackish; posterior coxae also largely dark. Hind femur blackish on distal two-thirds; middle femur with a dark band before the tip. Wings (Pl. II, fig. 17) with the dark markings on the same plan as in the last three species, but less extensive; dark cloud in middle not involving *M*₁ or *Cu*₁. Hypopygium (text-fig. 6, B) very like that of *maculipennis*, but inner style blackened and truncate at tip, with one blunt prominence near base.

Wing-length 4 mm.

BRAZIL: Juquia, São Paulo (*J. Lane*), 1 ♂ (type), presented to British Museum by the collector.

GROUP E (*Neurocompsa* Enderlein).

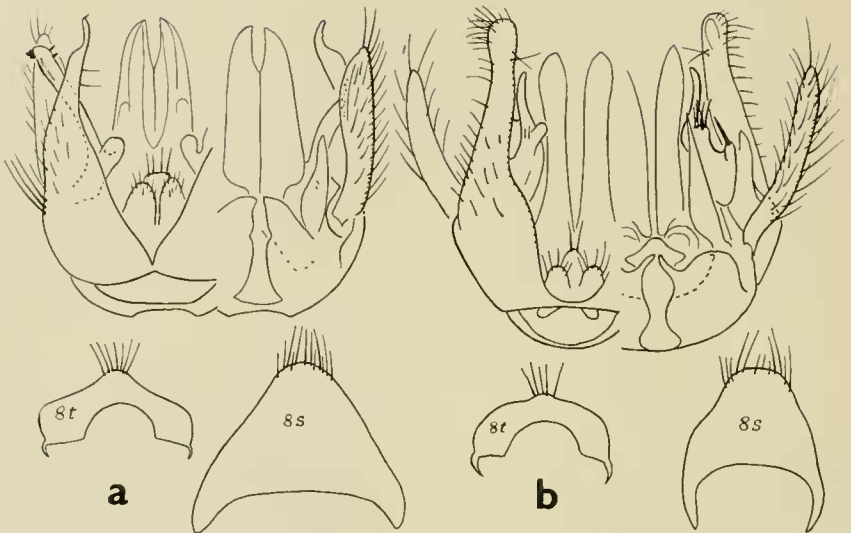
Venation and trichiation of wings as in Group D, except that *Sc* is usually setose for a short distance at tip, and *Sc*₁ is usually longer. Ocellar bristles long, as in Group D, though not always reaching to base of antennae. Bare stripes on mesonotum as in Groups C and D. Pleural markings as in Group D, but the oblique stripe sometimes faint. Wing-markings less conspicuous than in Group D; basal cell entirely clear except for the cloud over base of *Rs*. Halteres with knob mainly or all dark (except in *N. lüderwaldti*).

Neompheria ornatipennis (Enderlein).

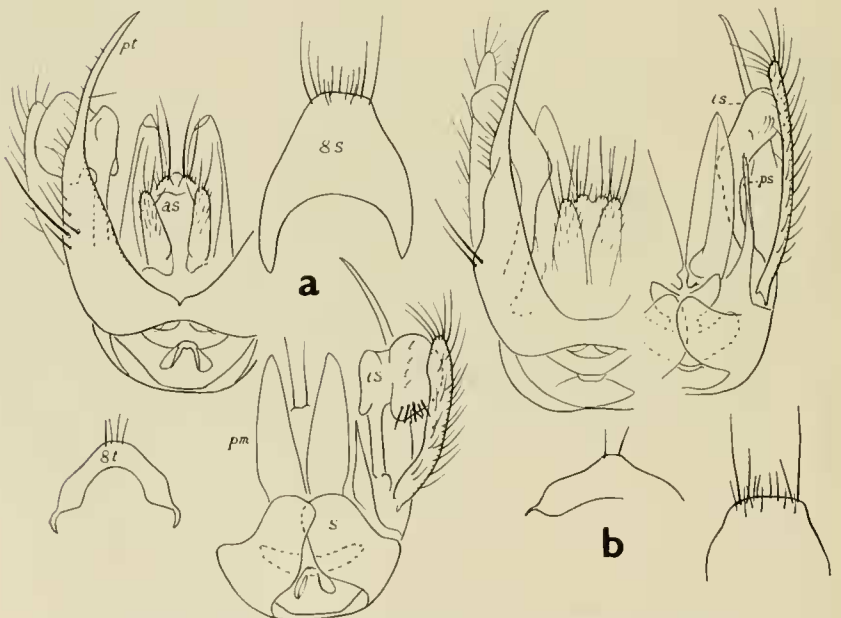
1911. *Neurocompsa ornatipennis* Enderlein, *Stettin. ent. Ztg.*, 72: 159.

In addition to Enderlein's type ♂ collected by Lüderwaldt, I have examined two males of this species collected by Plaumann at Nova Teutonia, and another collected by Lane, probably near São Paulo.

The species is well distinguished from all others of the genus by the abrupt sinuosity of the fold between *R*₅ and *M*, with a dark ridge or thickening connecting on to *R*₅ at the top of the bend. Apart from this peculiarity *N. ornatipennis* shows no very striking differences from others placed with it in this group. The ocellar bristles reach the base of the antennae. Flagellum dark almost to the base. Mesonotum mainly light brown, with three darker brown stripes connected by a narrow dark band on front margin; the sublateral pair of stripes broader than the median stripe, which is very narrow and fades out posteriorly. Oblique stripe of pleurae distinct. A narrow transverse brown band at base of postnotum and extending on each side over base of pleurotergite and on posterior edge of anepisternite. Abdomen with tergite 1 dark above, yellow at sides, 2 rather broadly pale at sides and on posterior margin, 3 yellow at sides at base but broadly dark posteriorly, 4 yellow with a dark area at base in middle, 5 and 6 mainly dark. Wings (Pl. II, fig. 19) with a rather large pale area in base of median fork; vein *M*₁ somewhat concave above in middle. All coxae yellow; hind femora somewhat darkened. Hypopygium (text-fig. 7, A) rather peculiar in that the two halves of the tergite are connected at a point instead of by a transverse band; inner style with a few black spines at tip; terminal finger of tergite short; outer style rather broad. Eighth tergite with about six setae in middle of distal margin.



TEXT-FIG. 7.—Hypopygia of *Neoempheria*: A, *ornatipennis*; B, *evanescens*.



TEXT-FIG. 8.—Hypopygia of *Neoempheria*: A, *kästneri*; B, *subclavata*.

***Neoempheria evanescens* (Enderlein).**

1911. *Pleonazoneura johannseni* var. *evanescens* Enderlein, *Stettin. ent. Ztg.*, 72: 158.

♂. In most respects very similar to *N. kästneri* and other species described below, but is rather smaller and with fainter wing-markings; pleural stripe present as in other species of this group, and abdominal markings as in *N. kästneri*. Features which may distinguish it from other species of the group are the faintness of the acrostichal as well as the dorso-central dark stripes of the mesonotum and the complete absence of setae on vein Sc. Hypopygium (text-fig. 7, B) quite distinctive; tergite hairy at tip, without any definite process; inner style of unusual form; outer style rather short; lobes of sternite with a small finger-like projection.

BRAZIL: Santa Catharina (*Lüderwaldt*), 1 ♂ (lectotype, in Stettin Museum).

***Neoempheria kästneri* sp. n.**

♂. Colour and markings almost exactly as in *N. ornatipennis* except that the hind femora are not in the least darkened, but are yellow like the others; second abdominal tergite with the dark area above rather longer, nearly reaching posterior margin; pale area in base of median fork rather smaller; wings with fold between R₅ and M straight, M₁ also quite straight. Hypopygium (text-fig. 8, A): chiefly distinguished by the form of the inner style, which has a greatly enlarged tip (this collapses in drying and maceration is needed to restore its true form); outer style broadish; the slender terminal process of tergite almost as long as tergite itself. Anal segment with long setae. Eighth tergite with four setae.

Wing-length 4 mm.

BRAZIL: Santa Catharina (*Lüderwaldt*), 1 ♂ (type) in Stettin Museum, formerly a paratype of *Pl. johannseni* End. Nova Teutonia (*Plaumann*), 3 ♂ in British Museum.

Dedicated to Dr. Kästner of Stettin town Museum, in appreciation of his kind assistance during my visit there in 1933, and subsequently.

***Neoempheria subclavata* sp. n.**

♂. Closely resembles *N. kästneri* in all external features, hypopygium (text-fig. 8, B) also similar in type, having the tergite largely bare, with one or two long bristles at side in middle and with long terminal process; anal segment large, with long setae and with the sternite notched. Differs from *N. kästneri* in having the outer style much longer and more slender, and the inner style less swollen at the tip and without any black spines. Eighth tergite with only two setae.

BRAZIL: Nova Teutonia (*Plaumann*), 2 ♂ (including type).

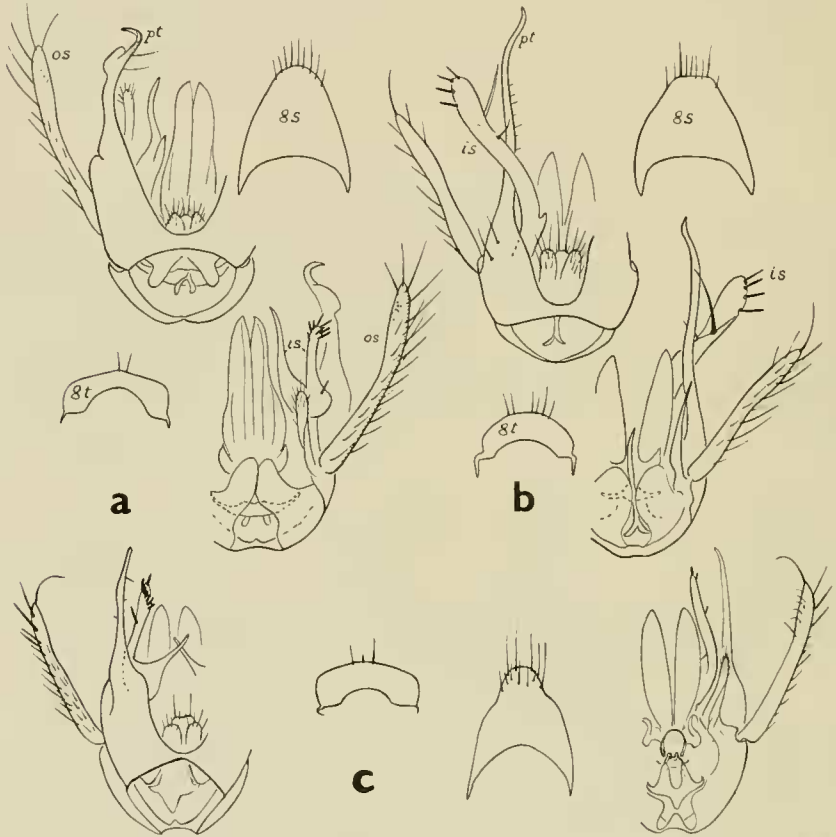
***Neoempheria lüderwaldti* sp. n.**

♂. Closely resembles *N. kästneri* in all external features, except that the halteres are almost entirely yellow; wings as in Pl. II, fig. 20. Hypopygium (text-fig. 9, A) quite different; terminal process of tergite with a wide enlargement before tip; inner style divided almost to base into two arms, inner arm slender and pointed, outer arm ending in a tuft of black spines; outer style slender. Anal segment small, with short setae. Eighth tergite with two setae.

BRAZIL : Santa Catarina (*Lüderwaldt*), 1 ♂ (type) in Stettin Museum, formerly a paratype of *Pl. johannseni* var. *evanescens* End. Nova Teutonia (*Plaumann*), 1 ♂ in British Museum.

Neoempheria enderleini sp. n.

♂. Closely resembles *N. kästneri* in nearly all respects, but yellow areas on sides of third tergite occupying less instead of more than half its length, and



TEXT-FIG. 9.—Hypopygia of *Neoempheria* : A, *lüderwaldti* ; B, *enderleini* ; C, *smarti*.

cubital fork more parallel-sided, with *CuI* distinctly turned up at tip. Hypopygium (text-fig. 9, B) quite different : tergite without strong bristles and with the terminal process extremely long ; inner style not swollen at tip and with one long black bristle in addition to some shorter ones ; outer style less bristly ; anal segment small and with short setae ; aedeagus with a long median rod, which is not present in *kästneri*. Eighth tergite differently shaped and with six setae.

BRAZIL : Santa Catharina (*Lüderwaldt*), 1 ♂ (type) in Stettin Museum, formerly a paratype of *Pl. johannseni* var. *evanescens* End. Nova Teutonia (*Plaumann*), 1 ♂ in British Museum.

***Neoempheria smarti* sp. n.**

♂. Closely resembles *N. kästneri*, *enderleini* and related species described above, but smaller than any of them. Flagellum dark. Ocellar bristles nearly reaching base of antennae. Mesonotum with sublateral stripes distinct and median stripe fairly obvious, but dorso-central stripes not developed. Pleural stripe as usual; dark band at base of postnotum extending on to base of pleurotergite. Abdomen with tergite 1 dark above, 2 with lateral and posterior margins broadly yellow, 3 and 6 yellow laterally at base, 4 and 7 all yellow, 5 all dark. Coxae and femora entirely yellow. Wings with rather faint markings arranged as in the related species; a rather large pale area in base of median fork; cloud below Cu₂ indefinite. Sc completely bare. M₂ markedly bent upwards at tip. Hypopygium (text-fig. 9, c): tergite bare except for a few fine hairs on the long and simple terminal process; inner style broad at base and divided into two nearly to the base, dorsal part forming a long spine, ventral part longer and stouter, bearing 7-8 black spines at its tip; outer style slender. Eighth tergite with 3 setae in type (perhaps normally 2).

Wing-length scarcely over 2 mm.

BRITISH GUIANA: Mazaruni, secondary forest, 16.viii.37 (*O. W. Richards* and *J. Smart*), 1 ♂.

The structure of the hypopygium of this species is as nearly as possible intermediate between *N. lüderwaldti* and *enderleini*, the inner style resembling the former and the tergite the latter species.

***Neoempheria unispinosa* sp. n.**

♂. Closely resembles *N. kästneri*, but mesonotal markings somewhat different; the median stripe is faint and abbreviated posteriorly, and there is a pair of faint dorso-central stripes which are more distinct behind and unite in front of the scutellum. Hypopygium (text-fig. 10, A) comparatively small and of quite different structure: halves of tergite regularly tapering and with a single strong bristle outwardly near base; inner style slender, with one black spine at base, tip bare; outer style slightly clubbed; ventral process of sternite long. Eighth tergite with two setae.

BRAZIL: Nova Teutonia (*Plaumann*), 1 ♂ (type).

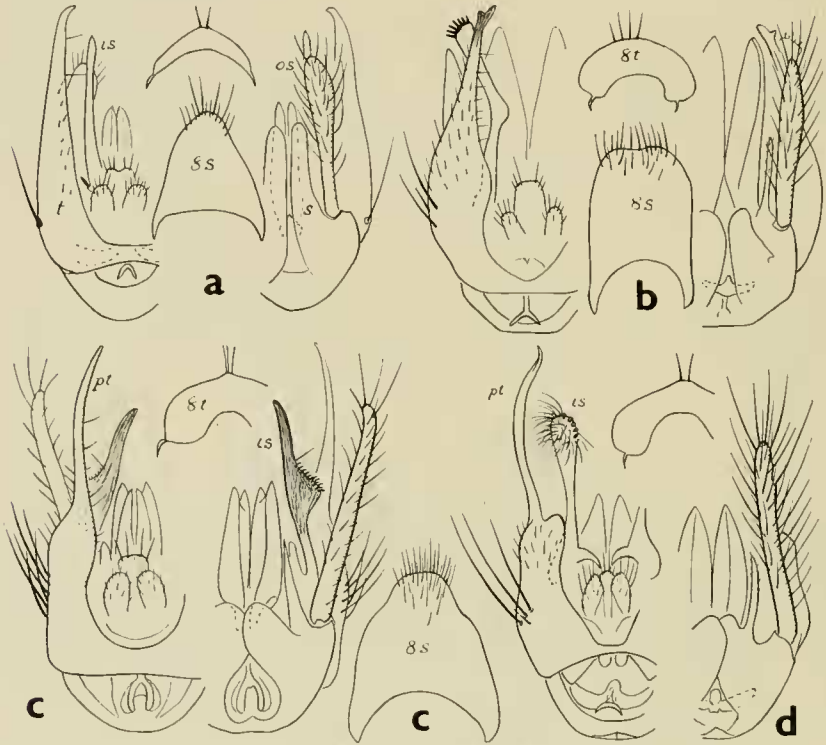
***Neoempheria flavicornis* sp. n.**

♂. Closely resembles *N. kästneri*, but ocellar bristles shorter (though still long) and pleurotergite entirely yellow, in these respects differing from all the last eight species described. Flagellum with only the distal half dark, base extensively yellowish. Wing-markings (Pl. II, fig. 21) as in the allied species, but cubital fork rather differently shaped. Second tergite rather broadly yellow posteriorly, third with yellow lateral patches occupying half its length, fourth with a small dark area above. Hypopygium (text-fig. 10, B) somewhat of the type of *N. kästneri*, but process of tergite not so long, with a small projection near tip; inner style elbowed but not swollen, with about six black spines in a row at tip; outer style rather short. Eighth tergite with four setae.

BRAZIL: Nova Teutonia (*Plaumann*), 1 ♂ (type).

Neoempheria rostrata sp. n.

♂. Closely resembles *N. flavicornis* and *pilosa*, and like them with the pleurotergite completely yellow; small external differences which may not be constant are that the dark dorsal area of tergite 2 extends almost to the posterior margin, and vein Sc1 is noticeably longer than Sc2 instead of only about as long. Hypopygium (text-fig. 10, c) quite different: tergite with the basal part almost bare except for a group of stout lateral bristles, process long, slender and pointed, no shoulder at its origin; inner style blackened, widened in middle and with an



TEXT-FIG. 10.—Hypopygia of *Neoempheria*: A, *unispinosa*; B, *flavicornis*; c, *rostrata*; D, *pilosa*.

irregularly double row of short black spines on distal margin of the wide part, a single fine hair in addition to the spines, but the long beak-like tip bare; parameres each ending in two points.

BRAZIL: Nova Teutonia (*Plaumann*), 1 ♂ (type).

Neoempheria pilosa sp. n.

♂. Closely resembles the last species in all external features, having the oblique pleural stripe distinct as in other species of this group but the pleurotergite entirely pale. Hypopygium (text-fig. 10, D) very distinctive owing to the structure of the inner style, which is slightly clubbed, the club clothed with a tuft of hair. Tergite with three long bristles on basal part, the long terminal

process arising abruptly from a shoulder. Outer style moderately long and very hairy. Eighth tergite with two setae.

BRAZIL: Nova Teutonia (*Plaumann*), 2 ♂ (including type).

Females of this group cannot at present be associated with their respective males, and there are probably many other species in addition to those described above. One such is represented in the British Museum by a damaged male from Manaus (*G. V. Vredenberg*).

GROUP F (*Pleonazoneura* Enderlein).

Wings and mesonotum as in Group E, but ocellar bristles shorter, reaching only a little beyond front edge of the black spot, and pleurae lacking the oblique stripe, at most with a small dark area immediately in front of wing-root. Halteres with dark knob.

Neoempheria lindneri sp. n.

♂. Head with the area between ocellar spot and base of antennae darker than usual. Ocellar bristles longer than in other species of this group. Mesonotal colouring as in *N. ornatipennis* and *kästneri*, except that the dark band on postnotum is sharply defined, broadly V-shaped and distinctly removed from base of postnotum; pleurotergites with a sharply defined dark patch at base, which does not extend on to anepisternite. Immediately below and in front of wing-root is a small and rather ill-defined dark area which does not cross the anepisternite. All coxae yellow. Abdominal markings as in *N. kästneri*, tergites 2 and 4 being broadly pale on posterior margin. Wings (Pl. I, fig. 6) with the dark markings stronger than in the species of Group E, and peculiar in having no darker area below Cu_2 , but a slight cloud in basal half of basal cell. Hypopygium (text-fig. II, A): in many respects very similar to that of *N. enderleini*, but inner style rather differently shaped and darkened, with two black bristles at middle and only two or three black spines at tip; eighth tergite otherwise.

Wing-length 4 mm.

BRAZIL: Nova Teutonia (*Plaumann*), 1 ♂ (type).

Dedicated to my friend Dr. E. Lindner of Stuttgart, who made a collecting expedition to the Chaco in 1925-26.

Neoempheria shannoni sp. n.

♂. Head largely pale above, dark at sides and on space between ocellar spot and base of antennae. First few antennal segments yellowish; palpi black as usual. Mesonotum with acrostichal and dorso-central dark stripes equally distinct and obviously darker than the ground colour, but sublateral stripes rather wider and darker as usual; postnotum with an ill-defined and indefinitely darker band at base, not or scarcely extending on to pleurotergites. Pleurae entirely yellow, no trace of darkening in front of wing-root. Abdomen with a continuous blackish median longitudinal stripe, not interrupted on posterior margins of tergites 2, 4 or 7; yellow areas at sides of tergites as usual, 3 and 5 with whole posterior margin broadly dark. Wings (Pl. II, fig. 22) with the dark areas of more intensive tint than in *N. kästneri* and related species, but similar in arrangement; a pale area completely fills base of median fork; a dark area present below Cu_2 as usual. Hypopygium (text-fig. II, c): tergite with each half long and narrow but somewhat truncate at tip, with several strong bristles near base;

inner style of rather complex form, with a long outwardly directed tooth at middle and about four small black teeth at tip. Eighth tergite square-ended, with about 10 setae.

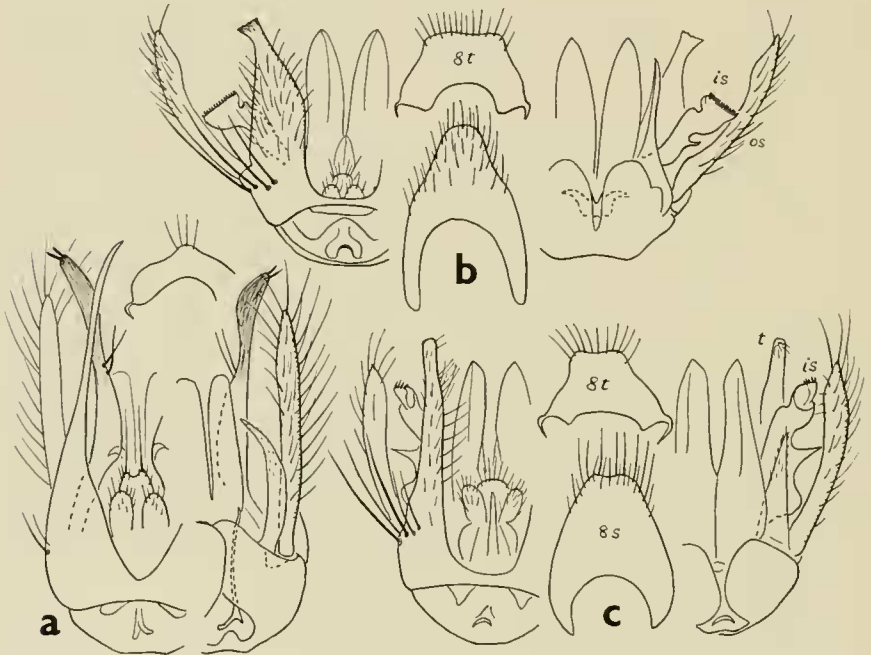
♀. Resembles ♂.

Wing-length 4 mm.

BRAZIL: Nova Teutonia (*Plaumann*), 1 ♂ (type), 1 ♀.

Dedicated to my friend Dr. R. C. Shannon.

This species seems to be rather nearly related to the North American *N. illustris* Johannsen, but in a female of the latter which I collected in Washington



TEXT-FIG. 11.—Hypopygium of *Neoempheria*: A, *lindneri*; B, *johannseni*; C, *shannoni*.

in 1928 the mesonotal markings are more sharply defined, and Johannsen's figure shows differences in the hypopygium, notably in the form of the inner style.

Neoempheria johannseni (Enderlein).

1911. *Pleonazoneura johannseni* Enderlein, *Stettin. ent. Ztg.*, 72: 156.

The lectotype male in the Stettin Museum closely resembles the last species in external features and the hypopygium (text-fig. 11, B) is also similar, but differs in detail: the tergite is much broader, and the inner style has a regular comb of ten or more small black teeth at the tip. Eighth sternite more hairy.

BRAZIL: Santa Catharina (*Lüderwaldt*).

Neoempheria costa-limai sp. n.

♂. Head largely pale above as usual; antennae with first five or six segments yellowish, rest dark; palpi black. Mesonotum with sublateral and acrostichal

stripes connected on front margin as usual, but dorso-central stripes not indicated. Postnotum with rather faint dark basal band indistinctly extending on to pleurotergites; pleurae otherwise entirely yellow. Abdominal tergites 2 and 4 almost all yellow, with a small dark area at base above. Wings (Pl. II, fig. 23) differing from those of all other species of Groups E and F described above in having the small cell shorter, with R₄ only a little beyond level of middle of stem of median fork. Dark areas of wing rather faint, but cloud at tip completely filling median fork. Hypopygium (text-fig. 12, A) in several respects very different from all the other species: tergite with twisted tip set with dense patches of setae; inner style bare and with bifid tip, parameres also with bifid tips; sternite on each side with a long bare pointed process, as long as the long and slender outer style. Eighth tergite larger than usual, with a row of about 16 setae.

Wing-length 3.5 mm.

BRAZIL: Nova Teutonia (*Plaumann*), 3 ♂ (including type).

Dedicated to Dr. A. Costa Lima.

Neoempheria biflagellata sp. n.

♂. Very similar to the last described species, differing mainly if not solely in structure of hypopygium (text-fig. 12, B). Like the last species this has the parameres divided at the tips and the lobes of the sternite drawn out into long bare whip-like processes as long as the outer styles, but the tergite has a completely different shape, as has the inner style, and other details also differ; the eighth tergite is smaller.

Wing-length barely 3 mm.

BRAZIL: Nova Teutonia (*Plaumann*), 1 ♂ (type).

GROUP G.

Sc ending above base of Rs; Sc₂ at its tip and transverse. R₄ near level of middle of stem of median fork, which is longer than usual, the small cell short. Costa strongly produced. fCu beyond base of Rs. Trichiation of veins alike in the two sexes, M₁ and Cu₂ setose throughout, M₂ completely bare, Cu₁ setose except at base; Sc completely bare; Cu bare except for a short distance before the fork. Wings with dark markings at middle and tip, but costal and basal cells clear except for the dark area over base of Rs. Ocellar bristles long, and bristle on second antennal segment longer than usual. Pleurae with dark longitudinal stripe or with lower part more extensively darkened, but upper part pale. No definite bare stripes between acrostichal and dorso-central hairs. Halteres yellow.

Neoempheria vogeli sp. n.

♂. Head yellowish except for the ocellar spot; antennae with first four or five segments pale, rest dark; palpi black. Mesonotum uniformly brown above, without stripes, but with the side margins rather narrowly yellow. Pleurae yellow, with a dark stripe crossing middle of pleurotergite and upper margin of sternopleura. Abdomen with tergites 2, 3 and 4 similarly coloured, with a continuous median dorsal dark stripe and with the posterior and lateral margins of each narrowly dark; 5 more extensively dark. Coxae and femora all yellow. Wings (Pl. I, fig. 3) slightly darkened at base, with the dark area in middle leaving much of the small cell clear, but covering basal half of stem of median fork. Apical dark area leaving base of fork clear but extending below base of

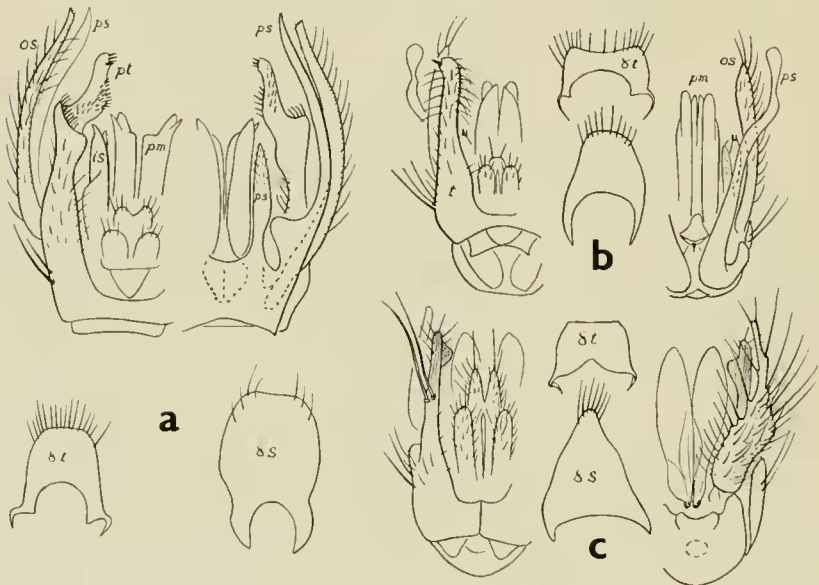
M2. Vein An reduced to a short stump. Hypopygium (text-fig. 12, c) : tergite broad at base, the terminal process expanded and blackened at tip and with a pair of long stout bristles ; anal segment large, the sternite deeply bifid ; apparently there is no inner style ; outer style forming a broad flat dark plate with a finger-like termination. Eighth tergite truncate and bare.

Wing-length 3.5 mm.

BRAZIL : Petropolis (*Vogel*), 1 ♂ (type), presented to British Museum by Father Borgmeier in 1931.

Neoempheria lutzi sp. n.

♀. Differs from *N. vogeli* as follows : Pleurotergite wholly dark ; sternopleura with a short dark stripe above. Abdomen with tergites 2 and 4 mainly



TEXT-FIG. 12.—Hypopygia of *Neoempheria* : A, *costa-limai* ; B, *biflagellata* ; C, *vogeli*.

yellow, with the anterior and posterior margins narrowly dark ; 3 (as well as 5-7) mainly dark. Hind coxa slightly darkened outwardly. Wings (Pl. I, fig. 4) not at all darkened at base, with the dark area in middle completely filling the small cell. Vein An long, but pale.

Wing-length 4.5 mm.

BRAZIL : Nova Teutonia (*Plaumann*), 1 ♀ (type).

Dedicated to Dr. Adolpho Lutz.

GROUP H.

Sc ending a little beyond base of Rs ; Sc2 a short distance from its tip and transverse. R4 before fM, stem of fork hardly longer than usual. Costa strongly produced. fCu before base of Rs. Sc, M2 and Cu1 completely bare ; stem of Cu bare except for a short distance before the fork ; M1 and Cu2 setose throughout. Wings dark in middle and at tip, basal half clear. Ocellar bristles short. Mesonotal bristles scantier than usual ; dorso-centrals irregularly uniserial ;

acrostichals few. Scutellum with two strong bristles as in other Neotropical species of the genus. Pleurae dark above, pale below. Halteres dark.

***Neoempheria pereirai* sp. n.**

♀. Head mainly dark brownish; scape brown, flagellum and palpi black. Thorax uniformly dark brown above and somewhat shining. Pleurae mainly blackish brown, but lower part of pleurotergite and whole of sternopleura whitish yellow, the two colours abruptly separated. All coxae whitish yellow, with the tips pale brownish yellow; femora and tibiae slightly darker than coxae, tarsi dark. Abdomen mainly blackish; tergite 2 with a rather narrow yellow transverse band beyond middle but with whole of posterior margin dark; 4 with a yellow spot on each side at about the middle; 7 mainly yellowish. Wings (Pl. I, fig. 5) narrower at base than in any of the other species, with the dark areas in middle and at tip broadly connected on hind margin, leaving base only of cell *Cu*₁ clear. Veins *Cu*₁P and *An* both obsolete.

Wing-length 3 mm.

BRAZIL: Salobra, Matto Grosso, vii. 1939 (*J. Lane*), 1 ♂ (type), presented to the British Museum by the collector.

Dedicated to Dr. Clemente Pereira, Director of the Clube Zoologico Brasileiro, under the auspices of which the expedition to Salobra was organized.¹

¹ A description of this species has also been included in a report on the Mycetophilidae collected by the Salobra Expedition; this report is being sent (January, 1940) for publication in *Boletim Biologico, S. Paulo* (N.S.).

(*MSS. recd. Jan. 20, 1940.*)

PLATE I.

Wings of *Neoempheria* spp.

- | | |
|---------------------------------|---------------------------------------|
| 1. <i>N. neivai</i> sp. n. | 7. <i>N. spinosa</i> sp. n. |
| 2. <i>N. bipectinata</i> sp. n. | 8. <i>N. brevicauda</i> sp. n. |
| 3. <i>N. vogeli</i> sp. n. | 9. <i>N. simplex</i> sp. n., ♀ var. ? |
| 4. <i>N. lutzi</i> sp. n. | 10. <i>N. simplex</i> sp. n., ♂ type. |
| 5. <i>N. pereirai</i> sp. n. | 11. <i>N. bilobata</i> sp. n. |
| 6. <i>N. lindneri</i> sp. n. | 12. <i>N. borgmeieri</i> sp. n. |

PLATE II.

Wings of *Neoempheria* spp.

- | | |
|--|-------------------------------------|
| 13. <i>N. plaumanni</i> sp. n. | 19. <i>N. ornati-pennis</i> (End.). |
| 14. <i>N. plaumanni</i> sp. n., var. ? | 20. <i>N. lüderwaldti</i> sp. n. |
| 15. <i>N. flavicoxa</i> sp. n. | 21. <i>N. flavicornis</i> sp. n. |
| 16. <i>N. mülleri</i> sp. n. | 22. <i>N. shannoni</i> sp. n. |
| 17. <i>N. lanei</i> sp. n. | 23. <i>N. costa-limai</i> sp. n. |
| 18. <i>N. maculipennis</i> Will. | 24. <i>N. biflagellata</i> sp. n. |